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17 August 1959

MEMORANDUM FOR: THE RECORD

SUBJECT : Trip Report

1. Time and Place of Meeting: 13, 14 August 1959, [redacted]  
Inc., New York, New York.

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2. Those in Attendance:



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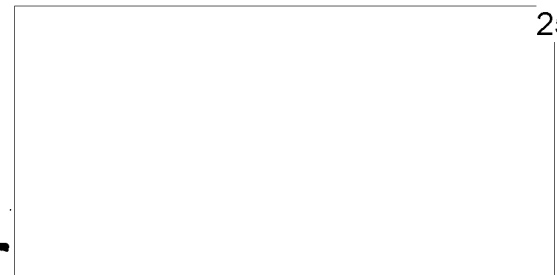
3. P-227 - Wire Analyzer (Production Version)

(a) The main purpose of this visit was the test and acceptance of the final production and modification run of the Model 30 wire analyzers. A total of eleven Model 30 analyzers were tested. The serial numbers of these units are: 201, 202, 203, 204, 205, 206, 207, 214, 217, 224, 226. Of these units, number 224 is a completely new unit. Numbers 207 and 226 were recently returned to the undersigned for repair. The remainder were part of the initial production and had been returned to the contractor for modification. One unit remains at the contractor for modification. This unit had a #204 designation from the Office of Security but may be re-designated after modification.

(b) Two additional units, numbers 235 and 240, were also tested. These units are the model 10 version for TSS/ASD. The [redacted] production of ten units for TSS/ASD is complete.

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(c) The following tests were conducted on all units:



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1. AC volt test - A line voltage of 115 volts was applied to the test terminals. This reading was compared to that of a calibrated Simpson AC meter. Acceptance was granted for errors less than 2%.

2. DC volt test - A battery voltage (dry cell) of 67.5 volts was applied to the test terminals. Acceptance was granted for errors less than 2%.

3. Audio Amplifier - Microphones of different impedance were connected to the test terminals and audio therefrom was monitored via phone and oscilloscope. Microphones used were: BK6B, MC-11, MC-14, MC-20, and BA-110. Acceptance was granted for "satisfactory" audio reception and amplification. "Satisfactory" was determined by the undersigned objectively.

4. Mike sing - The same microphones (except BK6B) used in (3) above were connected to the test terminals. A resultant audio emanation from the microphones, at their resonant frequency, was monitored by a GR sound level meter. A reading 40 db above ambient was deemed acceptable. The output of the oscillator was also monitored by a Ballantine voltmeter and oscilloscope for peak, RMS values, and waveshape of the audio output into 600 ohm and 2000 ohm loads.

5. DC/audio - A WE 302 telephone was connected to the test terminals. A microphone current of 10 ma was obtained and the resultant audio from the instrument off-hook was monitored by the undersigned and via scope. Satisfactory gain and low hum level were determined objectively by the undersigned.

6. AC Drain - A 2000 ohm resistive load was placed across the test terminals. Various voltage/current readings were obtained to determine voltmeter accuracy and maximum voltage output. This test was repeated for the DC/audio position to determine meter accuracies of the DC power supply.

7. Frequency Check - A frequency response curve was made for a WE 302 telephone and compared against a standard curve obtained by using a Waveform Oscillator, Ballantine Voltmeter, and a precision 10 ohm resistor.

Oscillator frequency was monitored with a frequency counter.

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Oscillator output was monitored with a Ballantine voltmeter. An additional output test was conducted wherein the voltage across a 600 ohm resistive load was monitored for all frequencies of the oscillator. Variations in oscillator output (when switching ranges) of 3 db were acceptable with the exception of the highest frequency range - 200 KC to 1 MC. An output variation of 6 db when switching to this range was acceptable.

Voltmeter accuracy and stability when switching ranges was observed and variations less than 5% full scale were acceptable. (Highest OSC range excepted)

(d) In addition to the above tests, all units had completed a 200 hour life test at the time of the undersigned's visit. Three units required 6C4 tube replacements in the voltmeter circuit to pass the frequency response test and voltmeter calibration test on low readings. It appears that this tube may be causing the voltmeter instability problems encountered by the Office of Security and shall require additional investigation by the undersigned.

(e) All units in Paragraph (a) were turned over to the Office of Security on 14 August 1959.

(f) Data sheets on all units are to be forwarded to the undersigned prior to 21 August 1959.

Transistorized Version

(g) The initial transistorized version was returned to the contractor for test and repairs. Initial checks indicated a possible noisy transistor in the voltmeter circuit. Additional tests will be required to more fully determine the voltmeter instability problem reported by the Office of Security upon return of the unit from field evaluation. The unit should be returned to the undersigned prior to 21 August 1959.

(h) The second transistorized unit was delivered to the undersigned and tests similar to those of (c) were conducted to the unit. This unit was returned with the undersigned and is undergoing additional test and evaluation.

This second unit has undergone extensive shielding to reduce coupling effects and internal repackaging to increase its reproducibility.

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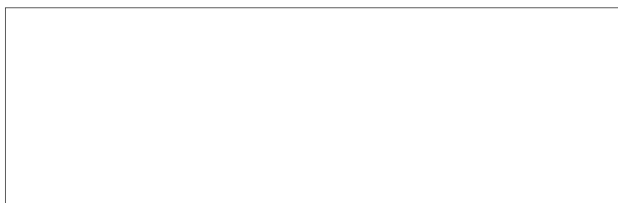
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